to decide this point. The binary pair A 2131 AB and its optical companion (= Ho 357) form the subject of a note in an earlier number of these *Publications*.[1]

January 2, 1920. R. G. AITKEN.

THE MICHELSON INTERFEROMETER METHOD FOR MEASURING CLOSE DOUBLE STARS

In the PUBLICATIONS for October, 1919, Mr. Hale describes observations made by Michelson and himself, using the interferometer with the 100-inch telescope. In order to apply the method to the measurement of close double stars, a simple apparatus with movable slits was constructed and a preliminary trial made on the night of December 30th by Mr. Pease and the writer.

The slits were about 4.5 mm. wide and 25 mm. long, and were mounted about 117 cm. inside the Cassegrain focus. The diameter of the cone of light at this point being about 73 mm., the arrangement was such that the slits could be separated by this amount. The apparatus carrying the slits could be rotated about the optical axis of the telescope, for determination of position angle. The fringes were observed thru an eyepiece of 1 cm. equivalent focus. With the slits at maximum separation, the fringes were found to be too close together for easy observation, so that a magnification three or four times greater is desirable, say a power of 50 to 100 diameters. Since the focal length of the Cassegrain combination is 1600 inches = 4060 cm., this would correspond to a telescopic magnifying power of 8000 to 16,000.

Algol (*β Persei*) was first observed. The fringes were fully visible for all distances and position angles of the slits. With the spectroscopic binary *Capella*, it was at once evident that the visibility changed with the position angle. The minimum distance between the slits, for which the visibility of the fringes is lowest (practically zero in this case), was found to be 38.7 mm., in position angle 148° (possibly 148° + 180°). Reduced to angular measure in accordance with the simple theory, this minimum distance gives 0″.042 as the separation of the components on December 30, 1919.

The object of the observations on December 30th was primarily to see whether the method can be applied to the measurement of

[1] *Publ. A. S. P.*, **31**, 197, 1919.

double stars, and to form some idea of just how an apparatus for this purpose should be constructed. As the method is evidently applicable, the apparatus is being constructed as rapidly as possible, so that regular observations may be undertaken.

The method appears to possess the following advantages:

1. The resolving power of the telescope (for double stars) is at least doubled.
2. Good seeing does not appear to be important, as the fringes were very sharp under poor atmospheric conditions.
3. Very small angular separations can be measured with an accuracy at least as great as that for larger angles.
4. The position angle can be determined as accurately for very close doubles as for those widely separated.

J. A. ANDERSON.

THE SPECTRUM OF T TAURI

The spectrum of the variable star T *Tauri*, associated with Hind's variable nebula N. G. C. 1555, has been discussed before in these PUBLICATIONS[1] by Adams and Pease on the basis of a spectrogram whose scale is 4.1 mm. from K of calcium to Hβ. The spectrum has now been photographed with the one prism spectrograph attached to the 100-inch reflector. The scale is 26.2 mm. from K to Hβ. An exposure of 5^h30^m gave a sufficiently strong continuous spectrum to make possible the measurement of absorption lines as far to the violet as λ 4134. When photographed, T *Tauri* was probably not brighter than visual magnitude 10.

Thirty-five absorption lines give a radial velocity of + 29 km/sec. Many other lines remain to be identified, but the foregoing are among the strongest. The strong absorption lines of iron are mostly of Class III in the electric furnace. The three lines λ 4250, λ 4260, and λ 4271 show this characteristic in a rather striking manner. The arc lines (in the comparison spectrum) λ 4250 and λ 4271 are each a blend of two lines, the violet component in each case being a line of Class III and the red component a Class II line; λ 4260 is a single Class III line. In all three cases the stellar lines give consistent displacements if only Class III lines are considered. The three strong chromium lines λ 4254, λ 4274, and λ 4289 are present. Numerous calcium lines are found—that at λ 4227 being very strong with a width of more than 5 A.

[1] *These Publications*, **27**, 133, 1915.